Analysis on characteristics of Mongolian Forest Fires using Satellite and Weather Data

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Analytical results on characteristics of Mongolian forest fires using satellite and weather data are described in this paper.

Mongolian wildland fires become very active due to recent abrupt climate change, illegal logging and overgrazing in pasture.

Recent fire activities were analyzed by using hotspot data from 2001 captured by NASA MODIS. Hotspot analysis results showed: 1. Mongolian fires were categorized into three, spring (April to June), summer (July, August) and autumn (September and October) Fire. 2. Spring fires mainly occur in pasture area. 3. Summer fires are usually not so active due to precipitation. 4. Autumn fires mainly occur in forest area.

As a background of recent active fires in 2000s, analytical results of weather data clearly showed: 1. Remarkable temperature rises about 1 to 3 degree centigrade are found from spring to autumn. 2. Summer precipitation in July and August become about half.

Furthermore, analytical results of large top four fires showed: 1. Autumn fires in September 2002 and October 2005 occurred in mainly forest areas due to summer drought. 2. Spring fires in May 2007 and June 2004 occurred in mainly pasture areas due to low precipitation.

Future work will be focused on relationship between boreal forest and permafrost in Mongolia.